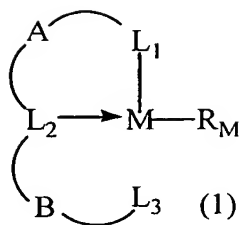


## CLAIMS

## 1. Compounds of general formula 1



5 in which

M represents an element of group 12;

$\text{R}_\text{M}$  represents the hydrogen atom, a halogen atom, or an alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio, arylthio, amino, alkylamino, dialkylamino, cycloalkylamino, di(cycloalkyl)amino, alkyl(cycloalkyl)amino, arylamino, diarylamino, alkylaryl amino or (cycloalkyl)aryl amino radical;

A and B represent, independently, a carbon chain of 2 to 4 carbon atoms, optionally substituted by one or more of the following substituted or non-substituted alkyl, cycloalkyl or aryl radicals, in which said substituent is a halogen atom, an alkyl, nitro or cyano radical;

$\text{L}_1$  and  $\text{L}_2$  represent, independently, a group of formula  $-\text{E}_{15}(\text{R}_{15})-$  in which  $\text{E}_{15}$  is an element of group 15 and

$\text{R}_{15}$  represents the hydrogen atom; one of the following substituted or non-substituted alkyl, cycloalkyl or aryl radicals, in which said substituent is a halogen atom, an alkyl, nitro or cyano radical; a radical of formula  $-\text{E}_{14}\text{RR}'\text{R}''$  in which  $\text{E}_{14}$  is an element of group 14 and R, R' and R'' represent, independently, the hydrogen atom or one of the following substituted (by one or more identical or different substituents) or non-substituted alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio or arylthio radicals, in which said substituent is a halogen atom, the alkyl, nitro or cyano radical; or a radical of formula  $-\text{SO}_2\text{Q}$  in which Q represents a halogen atom, an alkyl, haloalkyl or aryl radical optionally substituted by

one or more substituents chosen from the alkyl, haloalkyl and halogen radicals;

$L_3$  indifferently represents a group of formula  $-E'_{15}(R'_{15})(R''_{15})$  or  $-E_{16}(R_{16})$  in which

5  $E'_{15}$  is an element of group 15 and

$E_{16}$  is an element of group 16 and

$A_2$   $R'_{15}$ ,  $R''_{15}$  and  $R_{16}$  represent, independently, the hydrogen atom; one of the following substituted (by one or more identical or different substituents) or non-substituted alkyl, cycloalkyl or aryl radicals, in which said substituent is a halogen atom, the alkyl, nitro or cyano radical; a radical of formula  $-E'_{14}TT'T''$  in which  $E'_{14}$  is an element of group 14 and T, T' and T'' represent, independently, the hydrogen atom or one of the following substituted (by one or more identical or different substituents) or non-substituted alkyl, cycloalkyl, aryl, alkoxy, cycloalkoxy, aryloxy, alkylthio, cycloalkylthio or arylthio radicals, in which said substituent is a halogen atom, the alkyl, nitro or cyano radical; or a radical of formula  $-SO_2Q'$  in which  $Q'$  represents a halogen atom, an alkyl, haloalkyl or aryl radical optionally substituted by one or more substituents chosen from the alkyl, haloalkyl and halogen radicals.

$A_3$  20 2. Compounds of formula 1 as defined in claim 1, characterised in that they are presented in the form of a monomer or a dimer.

3. Compounds of general formula 1 as defined in one of claims 1 to 2, characterised in that

$R_M$  represents an alkyl group;

25 A and B represent, independently, a carbon chain of 2 to 4 carbon atoms;

$A_3$   $L_1$  and  $L_2$  represent, independently, a radical of formula  $-E_{15}(R_{15})-$  in which  $E_{15}$  is a nitrogen or phosphorus atom and  $R_{15}$  represents a hydrogen atom or a radical of formula  $-E_{14}RR'R''$  in which  $E_{14}$  represents a carbon or silicon atom and R, R' and R'' represent, independently, the hydrogen atom or an alkyl radical;

30  $L_3$  represents a radical of formula  $-E'_{15}(R'_{15})(R''_{15})$  in which  $E'_{15}$  is a nitrogen or phosphorus atom, and  $R'_{15}$  and  $R''_{15}$  represent, independently, a hydrogen atom or a radical of formula  $-E'_{14}TT'T''$  in which  $E'_{14}$  represents a carbon or silicon atom and T, T' and T'' represent, independently, the hydrogen atom or an alkyl radical.

$A_3$  35 4. Compounds of general formula 1 as defined in one of claims 1 to 3, characterized in that M represents a zinc atom.

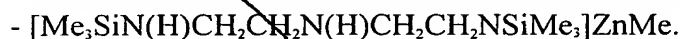
5. Compounds of general formula 1 as defined in one of claims 1 to 4, characterized in that

$R_M$  represents a methyl radical;

A and B represent, independently, a carbon chain of 2 carbon atoms;

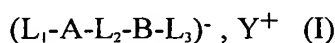
$L_1$  and  $L_2$  represent, independently, a radical of formula  $-E_{15}(R_{15})-$  in which  $E_{15}$  is a nitrogen atom and  $R_{15}$  represents a hydrogen atom, a methyl, ethyl, propyl, isopropyl radical or a radical of formula  $-E_{14}RR'R''$  in which  $E_{14}$  represents a silicon atom and R, R' and R'' represent, independently, the hydrogen atom or a methyl, ethyl, propyl or isopropyl radical;  $L_3$  represents a radical of formula  $-E'_{15}(R'_{15})(R''_{15})$  in which  $E'_{15}$  is a nitrogen atom, and  $R'_{15}$  and  $R''_{15}$  represent, independently, a hydrogen atom, a methyl, ethyl, propyl, isopropyl radical or a radical of formula  $-E'_{14}TT'T''$  in which  $E'_{14}$  represents a silicon atom and T, T' and T'' represent, independently, the hydrogen atom or a methyl, ethyl, propyl or isopropyl radical.

6. Compounds of general formula 1 as defined in one of claims 1 to 4 and corresponding to the following formulae:

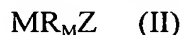


7. Compounds of formula 1 as defined in claim 6, characterised in that they are presented in dimer form.

8. Process for the preparation of the products of general formula 1 as defined in claim 1, characterized in that a product of formula I



in which  $L_1$ , A,  $L_2$ , B and  $L_3$  have the meanings indicated in claim 1 and Y represents the hydrogen atom, a metal or a metallic group, is reacted with a product of formula II



in which M and  $R_M$  have the meanings indicated in claim 1 and Z represents a parting group, in order to obtain a product of formula 1.

9. Use of the products of formula 1 as defined in any one of claims 1 to 7, as polymerization or copolymerization catalyst.

10. Use according to claim 9 for the polymerization or copolymerization of heterocycles, in particular epoxides such as propylene oxide.

11. Use according to claim 9, for the polymerization or copolymerization of cyclic esters, in particular the polymer cyclic esters of lactic and/or glycolic acid.

As 12. ~~Process for the preparation of block or random copolymers, or polymers which consist of bringing into contact with one or more monomers, a chain initiator and/or a regulator, a polymerization catalyst and optionally a polymerization solvent, at a temperature comprised between ambient temperature and 250° C, for a duration comprised between a few minutes and 300 hours, said process characterized in that the chain initiator and/or the regulator and the polymerization catalyst are represented by the same compound which is chosen from the compounds according to claims 1 to 7.~~

Ab 13. ~~Process according to claim 12, characterized in that the monomer is chosen from the epoxides, and in particular propylene oxide, or the cyclic esters, and in particular the polymer cyclic esters of lactic and/or glycolic acid.~~

Asb 14. ~~Polymers or copolymers which can be obtained by carrying out a process according to one of claims 12 or 13.~~

Add A7 >